



PORT RESILIENCE: NEW TECHNOLOGIES FOR DISASTER RISK MANAGEMENT

PANEL DISCUSSION

Highlighting experiences from The St. Christopher Air and Sea Ports Authority (SCASPA) and the Federation of St. Kitts and Nevis.

Presented by: Adeola Moore

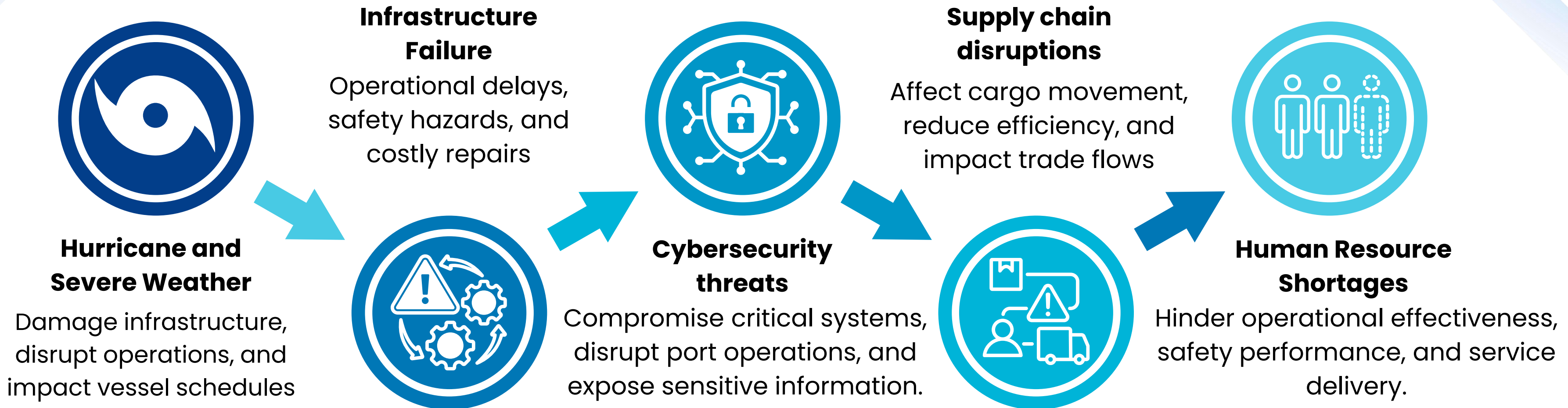
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 www.scaspa.com

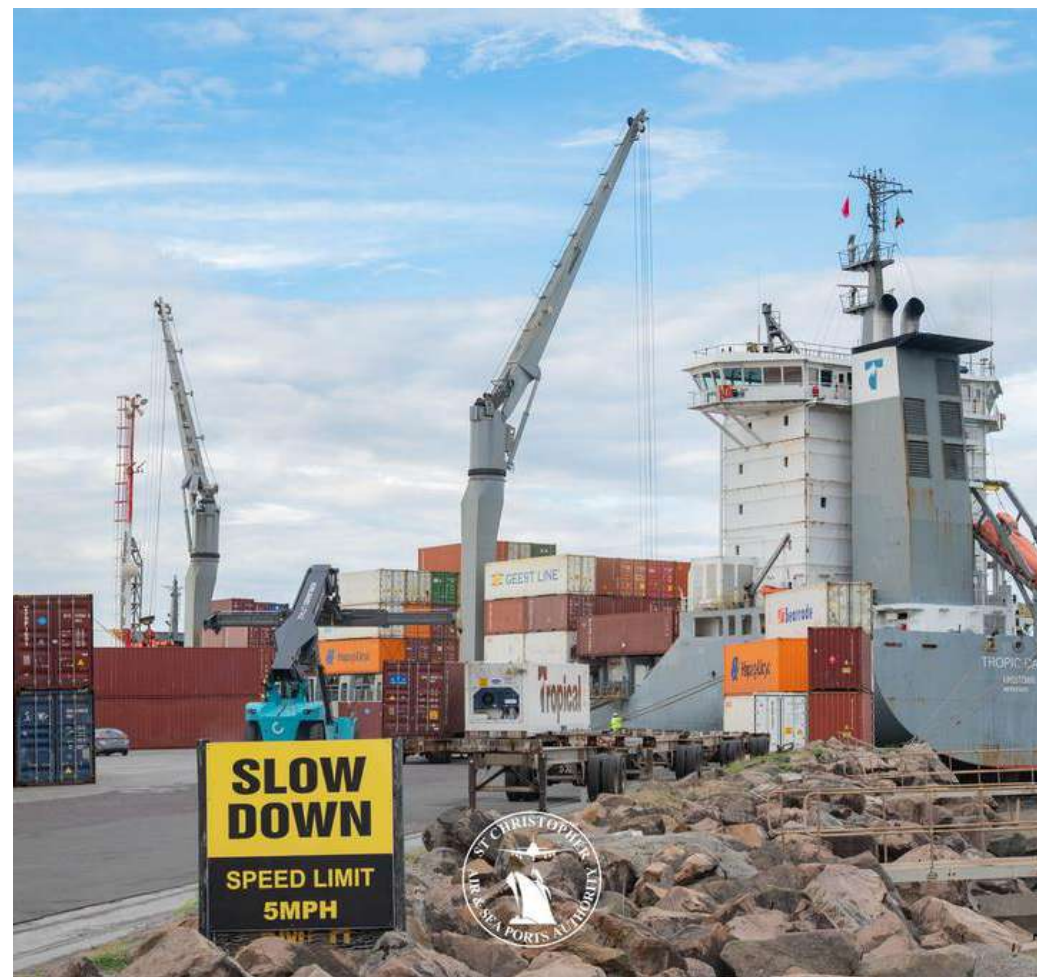
 Bird Rock, St. Kitts



PORT PERFORMANCE, SAFETY, AND BUSINESS CONTINUITY RISKS



WHY RESILIENCE MATTERS FOR SMALL ISLAND PORTS



1 Cruise Tourism 

2 Cargo Operations 

3 National Food Security 

4 Fuel Imports 

5 Economic Activity 



A MAJOR HURRICANE CAN IMPACT

➤ BERTHS

➤ PASSENGER TERMINALS

➤ CARGO HANDLING OPERATIONS

➤ ELECTRICAL SYSTEMS

➤ WATER SUPPLY

➤ COMMUNICATIONS

TECHNOLOGY BEFORE THE DISASTER

MONITORING AND PREPAREDNESS: CURRENT AND EMERGING TOOLS

Weather system forecasting

Provide early warnings of storms and adverse weather conditions to support operational planning and risk reduction

Satellite Imagery

Offers real-time monitoring of weather systems and coastal conditions over large geographic areas

Tide and Storm Surge Monitoring

Tracks sea level changes and potential flooding risks to help protect port infrastructure and assets

TECHNOLOGY BEFORE THE DISASTER

MONITORING AND PREPAREDNESS: CURRENT AND EMERGING TOOLS

Vessel Tracking System

Monitors vessel locations and movements, enabling better traffic management and emergency preparedness

Drone Inspections

Allows rapid assessment of critical infrastructure and vulnerable areas without exposing personnel to risk

AI for Predictive Modeling

Analyzes data trends to forecast potential disruptions, infrastructure failures, and disaster impacts before they occur

QUESTION

By show of hands, how many of your ports currently use Artificial Intelligence for predictions or predictive analytics as it relates to natural disasters?

ARTIFICIAL INTELLIGENCE



Early Risk Detection



**Improved Decision -
making**



Resource Optimisation



**Reduced Operational
Disruptions**



ST. KITTS MET OFFICE

- Automatic Weather Stations
- Geocast System
- Regional Partnership
- HF Radios for Emergency

EARLY WARNING

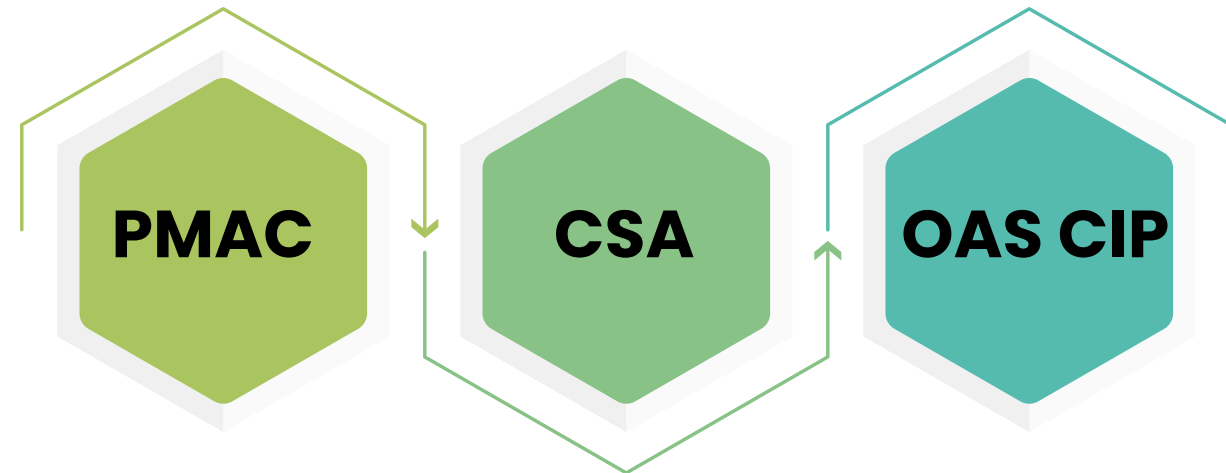
- > Secure equipment
- > Suspend Operations Safely
- > Coordinate with ship agents
- > Alert Stakeholders

PREPARE LONG BEFORE THE STORM!



LOCAL, REGIONAL AND INTERNATIONAL COOPERATION AND PARTNERSHIP

Public-Private Partnerships



Port
Authorities

Meteorological
services

Cruise
Lines

Shipping
Companies

Regional
Organisations



COLLABORATE

LOCALLY

NATIONAL EMERGENCY MANAGEMENT AGENCY (NEMA)



NEMA serves as the national coordinating authority for disaster risk management, ensuring a unified and effective response to emergencies while promoting preparedness and resilience across critical sectors, including ports and transportation infrastructure.

CARIB WAVE PREPAREDNESS TSUNAMI EXERCISE



Carried out by NEMA as part of our national preparedness efforts, ensuring that all relevant stakeholders were appropriately informed and coordinated.



COLLABORATE

REGIONALLY AND INTERNATIONALLY

1

CARIBBEAN INSTITUTE FOR METEOROLOGY AND HYDROLOGY

2

GLOBAL BASIC OBSERVATION NETWORK (GBON)

3

IMO CARES





THANK YOU FOR YOUR ATTENTION

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 Bird Rock, Basseterre, St.
Kitts

